

General

Title

Preventive services for children and adolescents: percentage of newborns who have had neonatal screening for hemoglobinopathies, phenylketonuria and hypothyroidism in the first week of life.

Source(s)

Wilkinson J, Bass C, Diem S, Gravley A, Harvey L, Maciosek M, McKeon K, Milteer L, Owens J, Rothe P, Snellman L, Solberg L, Vincent P. Preventive services for children and adolescents. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2013 Sep. 96 p. [229 references]

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of newborns who have had neonatal screening for hemoglobinopathies, phenylketonuria and hypothyroidism in the first week of life.

Rationale

The priority aim addressed by this measure is to increase the rate of pediatric patients up-to-date with Level I preventive services.

Level I preventive services are worthy of attention at every opportunity. Busy clinicians cannot deliver this many services in any single encounter. However, with systems in place to track whether or not patients are up-to-date with the high-priority preventive services for their age group, clinicians can recommend the high-priority services as opportunities present.

Screening in the first week of life for conditions that are initially asymptomatic but that result in serious health issues in the first month of life must be recommended for hemoglobinopathies, phenylketonuria and hypothyroidism and other conditions according to state law.

Newborn screening for metabolic and other disorders is designed to detect infants with serious health conditions that are initially asymptomatic like inborn errors of metabolism and hypothyroidism. Early identification in many cases can avert a poor outcome for a child with various interventions, depending on the condition. There is strong evidence to support screening for hemoglobinopathies, phenylketonuria and hypothyroidism. Approximately 4,000 infants per year are identified with a condition through the newborn metabolic screening program. Each state varies on the test required to be done by law, but a uniform approach with all states using mass spectrometry is being promoted by various national groups. There is fair evidence that false-positive results are not a burden for parents. There is fair evidence that screening appears to be cost effective.

Evidence for Rationale

Insinga RP, Laessig RH, Hoffman GL. Newborn screening with tandem mass spectrometry: examining its cost-effectiveness in the Wisconsin Newborn Screening Panel. *J Pediatr*. 2002 Oct;141(4):524-31. [PubMed](#)

Lin K, Barton MB. Screening for hemoglobinopathies in newborns: reaffirmation update for the U.S. Preventive Services Task Force. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2007 Sep. 12 p. (Evidence synthesis; no. 52). [17 references]

Mabry-Hernandez I, Wolff T, Green K. Screening for phenylketonuria: a literature update for the U.S. Preventive Services Task Force. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2008 Mar. 5 p. [7 references]

Meyers DS, Halvorson H, Luckhaupt S, U.S. Preventive Services Task Force. Screening for chlamydial infection: an evidence update for the U.S. Preventive Services Task Force. *Ann Intern Med*. 2007 Jul 17;147(2):135-42. [25 references] [PubMed](#)

Norman R, Haas M, Chaplin M, Joy P, Wilcken B. Economic evaluation of tandem mass spectrometry newborn screening in Australia. *Pediatrics*. 2009 Feb;123(2):451-7. [PubMed](#)

Prosser LA, Ladapo JA, Rusinak D, Waisbren SE. Parental tolerance of false-positive newborn screening results. *Arch Pediatr Adolesc Med*. 2008 Sep;162(9):870-6. [PubMed](#)

Wilkinson J, Bass C, Diem S, Gravley A, Harvey L, Maciosek M, McKeon K, Milteer L, Owens J, Rothe P, Snellman L, Solberg L, Vincent P. Preventive services for children and adolescents. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2013 Sep. 96 p. [229 references]

Primary Health Components

Neonatal screening; hemoglobinopathies; phenylketonuria; hypothyroidism; newborns

Denominator Description

Number of newborns

Numerator Description

Number of newborns screened for hemoglobinopathies, phenylketonuria and hypothyroidism in the first week of life (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

Unspecified

National Guideline Clearinghouse Link

[Preventive services for children and adolescents.](#)

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Clinical Practice or Public Health Sites

Statement of Acceptable Minimum Sample Size

Unspecified

Target Population Age

Newborns

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Health and Well-being of Communities

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Staying Healthy

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

The time frame pertaining to data collection is annually.

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Patient/Individual (Consumer) Characteristic

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

Number of newborns

Exclusions

Unspecified

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

Number of newborns screened for hemoglobinopathies, phenylketonuria and hypothyroidism in the first week of life

Note: This measure is mandated by Minnesota State Law. Out-of-state organizations should be aware of their state's mandates.

Exclusions

Unspecified

Numerator Search Strategy

Fixed time period or point in time

Data Source

Paper medical record

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specific Disaggregation

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Percentage of newborns who have had neonatal screening for hemoglobinopathies, phenylketonuria and hypothyroidism in the first week of life.

Measure Collection Name

Preventive Services for Children and Adolescents

Submitter

Institute for Clinical Systems Improvement - Nonprofit Organization

Developer

Institute for Clinical Systems Improvement - Nonprofit Organization

Funding Source(s)

The Institute for Clinical Systems Improvement's (ICSI's) work is funded by the annual dues of the member medical groups and five sponsoring health plans in Minnesota and Wisconsin.

Composition of the Group that Developed the Measure

Work Group Members: John M. Wilkinson, MD (*Work Group Leader*) (Mayo Clinic) (Family Medicine); Charles Bass, MD (HealthPartners Medical Group and Regions Hospital) (Family Medicine); Michael Maciosek, PhD

(HealthPartners Medical Group and Regions Hospital) (Research); Peter Rothe, MD, FACP (HealthPartners Medical Group and Regions Hospital) (Internal Medicine/Geriatrics); Leonard Snellman, MD (HealthPartners Medical Group and Regions Hospital) (Pediatrics); Leif Solberg, MD (HealthPartners Medical Group and Regions Hospital) (Family Medicine); Leslie C. Milteer, PA-C (Multicare Associates) (Advanced Practitioner); Patricia Vincent, MD (Northwest Family Clinicians) (Family Medicine); Kimberly J. McKeon, MD (Olmsted Medical Center) (OB/GYN); Lisa Harvey, RD, MPH (Park Nicollet Health Services) (Health Education); Andrea Gravley, RN, MAN, CPNP (South Lake Pediatrics) (Pediatrics); Susan Diem, MD, MPH (University of Minnesota Physicians) (Internal Medicine); Jacob Owens, MPH (Institute for Clinical Systems Improvement) (Project Manager)

Financial Disclosures/Other Potential Conflicts of Interest

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Where there are work group members with identified potential conflicts, these are disclosed and discussed at the initial work group meeting. These members are expected to recuse themselves from related discussions or authorship of related recommendations, as directed by the Conflict of Interest committee or requested by the work group.

The complete ICSI policy regarding Conflicts of Interest is available at the [ICSI Web site](#) .

Disclosure of Potential Conflicts of Interest

Charles Bass, MD (Work Group Member)
Family Clinician, HealthPartners Medical Group and Regions Hospital
National, Regional, Local Committee Affiliations: None
Guideline-Related Activities: None
Research Grants: None
Financial/Non-Financial Conflicts of Interest: None

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National, Regional, Local Committee Affiliations: None
Guideline-Related Activities: None
Research Grants: Received grant money to her institution from the National Institute on Aging for testosterone replacement in older men
Financial/Non-Financial Conflicts of Interest: None

Andrea Gravley, RN, MAN, CPNP (Work Group Member)
Pediatric Nurse Practitioner, Pediatrics, South Lake Pediatrics
National, Regional, Local Committee Affiliations: Maple Grove Hospital Lactation work group
Guideline-Related Activities: None
Research Grants: None
Financial/Non-Financial Conflicts of Interest: None

Lisa Harvey, RD, MPH (Work Group Member)
Director, Health Education, Park Nicollet Health Services

National, Regional, Local Committee Affiliations: None

Guideline-Related Activities: None

Research Grants: Receives grant money to institution from the Mayo Clinic related to decision support.

Financial/Non-Financial Conflicts of Interest: None

Michael Maciosek, PhD (Work Group Member)

Research Investigator, HealthPartners Research Foundation, HealthPartners Health Plan

National, Regional, Local Committee Affiliations: None

Guideline-Related Activities: None

Research Grants: Receives grant money to his institution from Robert Wood Johnson Foundation, Centers for Disease Control and National Institute for Health for preventive services, disease management and cancer treatment

Financial/Non-Financial Conflicts of Interest: None

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Guideline-Related Activities: None

Research Grants: None

Financial/Non-Financial Conflicts of Interest: None

Leslie Milteer, PA-C (Work Group Member)

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Guideline-Related Activities: None

Research Grants: None

Financial/Non-Financial Conflicts of Interest: None

Peter Rothe, MD, FACP (Work Group Member)

Internist, Geriatrics and Hospice, Health Partners Medical Group and Regions Hospital

National, Regional, Local Committee Affiliations: None

Guideline-Related Activities: None

Research Grants: None

Financial/Non-Financial Conflicts of Interest: None

Leonard Snellman, MD (Work Group Member)

Pediatrician, White Bear Lake Medical Center, HealthPartners Medical Group and Regions Hospital

National, Regional, Local Committee Affiliations: None

Guideline-Related Activities: ICSI Respiratory Illness in Children and Adults

Research Grants: None

Financial/Non-Financial Conflicts of Interest: None

Leif Solberg, MD (Work Group Member)

Director Care Improvement Research, Family Medicine, HealthPartners Research Foundation

National, Regional, Local Committee Affiliations: Board member for HealthPartners Research Foundation

Guideline-Related Activities: None

Research Grants: Receives grant monies paid to institution from Patient-Centered Outcomes Research Institute (PCORI) for high-tech imaging, Centers for Medicare and Medicaid Services (CMS) for COMPASS (Care of Mental and Physical and Substance Use Syndromes), Agency for Healthcare Research and Quality (AHRQ) for medical homes

Financial/Non-Financial Conflicts of Interest: None

Patricia Vincent, MD (Work Group Member)

Clinician, Family Practice, Northwest Family Clinicians

National, Regional, Local Committee Affiliations: None

Guideline-Related Activities: Board member for Preferred One Clinicians Association Insurance Company

with money paid to her. Board member for Minnesota Academy of Family Clinicians Foundation, unpaid

Research Grants: None

Financial/Non-Financial Conflicts of Interest: None

John Wilkinson, MD (Work Group Leader)

Consultant, Department of Family Medicine, Assistant Professor of Family Medicine, Mayo Clinic and Mayo Foundation

National, Regional, Local Committee Affiliations: None

Guideline-Related Activities: None

Research Grants: None

Financial/Non-Financial Conflicts of Interest: None

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2013 Sep

Measure Maintenance

Scientific documents are revised every 12 to 24 months as indicated by changes in clinical practice and literature.

Date of Next Anticipated Revision

The next scheduled revision will occur within 24 months.

Measure Status

This is the current release of the measure.

This measure updates a previous version: Wilkinson J, Bass C, Diem S, Gravley A, Harvey L, Hayes R, Johnson K, Maciosek M, McKeon K, Milteer L, Morgan J, Rothe P, Snellman L, Solberg L, Storlie C, Vincent P. Preventive services children and adolescents. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2012 Sep. 98 p.

The measure developer reaffirmed the currency of this measure in January 2016.

Measure Availability

Source available for purchase from the [Institute for Clinical Systems Improvement \(ICSI\) Web site](#)

. Also available to ICSI members for free at the [ICSI Web site](#)

and to Minnesota health care organizations free by request at the [ICSI Web site](#)

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For more information, contact ICSI at 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; Phone: 952-814-7060; Fax: 952-858-9675; Web site: www.icsi.org ; E-mail: icsi.info@icsi.org.

NQMC Status

This NQMC summary was completed by ECRI Institute on September 7, 2012.

This NQMC summary was updated by ECRI Institute on January 29, 2013 and again on February 24, 2014.

The information was reaffirmed by the measure developer on January 13, 2016.

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Production

Source(s)

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